



**United States
Department of
Agriculture**

**Agricultural
Marketing
Service**

**Fruit and
Vegetable
Division**

**Processed
Products
Branch**

United States Standards for Grades of Frozen Okra

Effective date October 15, 1996

This is the fifth issue of the United States Standards for Grades of Frozen Okra published in the **FEDERAL REGISTER** of September 12, 1996 (61 FR 48066) to become effective October 15, 1996. This issue supersedes the fourth issue which has been in effect since December 7, 1995.

Voluntary U.S. grade standards are issued under the authority of the Agricultural Marketing Act of 1946, which provides for the development of official U.S. grades to designate different levels of quality. These grade standards are available for use by producers, suppliers, buyers, and consumers. As in the case of other standards for grades of processed fruits and vegetables, these standards are designed to facilitate orderly marketing by providing a convenient basis for buying and selling, for establishing quality control programs, and for determining loan values.

The standards also serve as a basis for the inspection and grading of commodities by the Federal inspection service, the only activity authorized to approve the designation of U.S. grades as referenced in the standards, as provided under the Agricultural Marketing Act of 1946. This service, available as on-line (in-plant) or lot inspection and grading of all processed fruit and vegetable products, is offered to interested parties, upon application, on a fee-for-service basis. The verification of some specific recommendations, requirements, or tolerances contained in the standards can be accomplished only by the use of on-line inspection procedures. In all instances, a grade can be assigned based on final product factors or characteristics.

In addition to the U.S. grade standards, grading manuals or instructions for inspection of several processed fruits and vegetables are available upon request for a nominal fee. These manuals or instructions contain detailed interpretations of the grade standards and provide step-by-step procedures for grading the product.

Grade standards are issued by the Department after careful consideration of all data and views submitted, and the Department welcomes suggestions which might aid in improving the standards in future revisions. Comments may be submitted to, and copies of standards and grading manuals obtained from:

Chief, Processed Products Branch
Fruit and Vegetable Division, AMS
U.S. Department of Agriculture
P.O. Box 96456, Rm. 0709, So. Bldg.
Washington, D.C. 20090-6456

United States Standards for Grades of Frozen Okra

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Authority: Agricultural Marketing Act of 1946, Secs. 203, 205, 60 Stat. 1087, as amended, 1090, as amended (7 U.S.C. 1622, 1624).

Note: Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act, or with applicable State laws and regulations.

§52.1511 Product description.

Frozen okra is the product prepared from the clean, sound, succulent, and edible fresh pods of the okra plant (*Hibiscus esculentus*) of the green variety. The product may or may not be trimmed, is properly prepared and properly processed, and is then frozen and stored at temperatures necessary for preservation.

§52.1512 Styles of frozen okra.

- (a) Whole okra** consists of trimmed or untrimmed whole pods of any length which may possess an edible portion of the cap. The length of a whole pod is determined by measuring from the outermost point of the tip end of the pod to the outermost point of the stem end of the pod, exclusive of any inedible stem portion which may be present.
- (b) Cut okra** is trimmed or untrimmed whole pods, which may possess an edible portion of cap, and which have been cut transversely into pieces of approximate uniform length. The length of a unit of cut okra is determined by measuring the longitudinal axis of the unit.

§52.1513 Grades of frozen okra.

- (a) U.S. Grade A or U.S. Fancy** is the quality of frozen okra that:
 - (1)** Possesses similar varietal characteristics in all styles;
 - (2)** Has a good flavor and odor;
 - (3)** Has a good color;
 - (4)** Is practically free from defects;
 - (5)** Has a good character; and
 - (6)** Scores not less than 90 points when scored in accordance with the scoring system outlined in this subpart.
- (b) U.S. Grade B or U.S. Extra Standard** is the quality of frozen okra that:
 - (1)** Possesses similar varietal characteristics in the whole style;
 - (2)** May or may not possess similar varietal characteristics in the cut style;

- (3) Has a normal flavor and odor;
 - (4) Has a reasonably good color;
 - (5) Is reasonably free from defects;
 - (6) Has a reasonably good character; and
 - (7) Scores not less than 80 points when scored in accordance with the scoring system outlined in this subpart.
- (c) **Substandard** is the quality of frozen okra that fails to meet the requirements of U.S. Grade B.

§52.1514 Ascertaining the grade of a sample unit.

- (a) **General.** The grade of a sample unit of frozen okra is ascertained by considering the factors of varietal characteristics and flavor and odor which are not scored; the ratings for the factors of color, defects, and character, which are scored; the total score; and the limiting rules which apply.
- (b) **Definitions.**
- (1) **Good flavor** means that the product, before and after cooking, has a good, distinctive flavor and odor, characteristic of young, tender okra and is free from any kind of objectionable flavor or objectionable odor.
 - (2) **Normal flavor** means that the product, before and after cooking, has a normal, typical flavor and odor, characteristic of properly prepared and processed okra and is free from any kind of objectionable flavor or objectionable odor.
- (c) **Sample Units.**
- (1) A **sample unit of Whole** okra shall be comprised of 50 pods of okra.
 - (2) A **sample unit of Cut** okra shall be comprised of 10 ounces of okra.

(d) **Evaluating quality factors.** The rating for the factors of color, defects, and character (with respect to pod and seed development), and the evaluation of similar varietal characteristics are determined immediately after thawing to the extent that the product is sufficiently free from ice crystals to permit proper handling as individual units. A representative sample is properly cooked (in sufficient unsalted water) to ascertain the tenderness of the units and freedom from fiber development before final evaluation of character. Flavor and odor is evaluated on both the uncooked and cooked sample.

(e) **Application of percentages.**

(1) The term **percent**, or the symbol **%**, wherever used in this subpart, means: Percent, by count, in the **Whole** style of frozen okra and percent, by weight, in the **Cut** style of frozen okra.

(f) **Factors rated by score points.** The relative importance of each factor which is rated is expressed numerically on the scale of 100. The maximum number of points that may be given for each factor is:

Factors	Points
Color	30
Defects	40
Character	<u>30</u>
Total Score	100

§52.1515 Ascertaining the rating of the factors which are scored.

The essential variations within each factor which is scores are so described that the value may be ascertained for each factor and expressed numerically. The numerical range within each factor which is scored is inclusive (for example: 27 to 30 points means 27, 28, 29, or 30 points).

§52.1516 Color.

(a) **"A" classification.** Frozen okra that possesses a good color may be given a score of 27 to 30 points. **Good color** means that the color of frozen okra is bright, practically uniform, and typical of the varietal characteristic for young, tender okra. No more than 10 percent of the units in the sample unit may possess a slightly dull color, or possess a slight yellowish-green to brownish-green cast, or vary materially from the overall general, uniform color; and none of the units in the sample unit may possess a noticeable yellow or brown color or be **off color**.

- (b) **"B" classification.** Frozen okra that possesses a reasonably good color may be given a score of 24 to 26 points. Frozen okra that falls into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a limiting rule). **Reasonably good color** means that the frozen okra possesses a color which may be slightly dull but which is typical of the varietal characteristic for reasonably young and reasonably tender okra. No more than 20 percent of the units in the sample unit may possess a color that is typical of less than reasonably young and reasonably tender okra: **Provided**, that not more than 6 percent of the units in the sample unit may possess a noticeable yellow or brown color or vary markedly from the general, overall color; and none of the units may be **off color**.
- (c) **"SStd" classification.** Frozen okra that fails to meet the requirements of paragraph (b) of this section may be given a score of 0 to 23 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

§52.1517 Defects.

- (a) **Visual aids.** Color print photographs illustrative of certain types of defects defined in this subpart are available for review at specified USDA Processed Products Inspection offices. Information regarding the location of such offices is available upon request from:

Chief, Processed Products Branch
Fruit and Vegetable Division, AMS
U.S. Department of Agriculture
P.O. Box 96456, Rm. 0709, So. Bldg.
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- (b) **General.** The factor of defects concerns the degree of freedom from units or any material as may be defined in paragraph (c) of the section or from any other defects present, whether or not specifically defined or listed therein, which would affect the appearance or edibility of the product.
- (c) **Definitions of types of defects.**
- (1) **Insignificantly blemished unit** refers to very slight abnormalities, scars, discolorations, or any other imperfections on the individual unit which may affect the appearance slightly but which do not affect the edibility of the unit.
- (2) **Blemished unit** means any unit which is so affected by discoloration or abnormalities, including trimmed or cut surfaces, as to materially affect the appearance of the unit.

- (3) **Seriously blemished unit** means any unit which is so affected by discoloration or abnormalities, including trimmed or cut surfaces, as to seriously affect the appearance or edibility of the unit.
- (4) **Harmless extraneous material** consists of leaves, attached inedible stems in excess of one-half inch, detached stems of any length, and similar harmless plant material.
- (5) **Poorly trimmed** units in the **Whole** style of frozen okra include, but are not limited to:
- (i) Pods with attached inedible stems of one-half inch or less;
 - (ii) Pods possessing a conical-shaped or severely biased cut of the cap portion;
 - (iii) Trimmed pods with cut surface having very ragged edges;
 - (iv) Pods with partially detached cap portions;
 - (v) Pods with attached portions of cap that are inedible.
- (6) **Poorly trimmed** units in the **Cut** style of frozen okra include, but are not limited to:
- (i) Units with attached inedible stems of one-half inch or less;
 - (ii) Units with portions of cap that are inedible.
- (7) **Excessively trimmed** are whole pods that:
- (i) Have been so trimmed as to collapse the pod;
 - (ii) Have been so trimmed as to expose a longitudinal plane of the seed cavity;
 - (iii) Have been obviously trimmed on both ends.
- (8) **A small piece in Whole** frozen okra means a piece of pod (exclusive of very small tip ends) which is one-fourth or less the weight of the smallest whole pod in the sample unit.

- (9) **Small pieces or damaged pieces** in cut frozen okra means pieces of pods one-fourth inch in length or less, or units that may be broken, mashed, split, shattered, or improperly or incompletely cut so as to noticeably affect the appearance or edibility of the unit.
- (10) **Damaged by mechanical injury** means whole pods or portions thereof that have been broken, mashed, split, or shattered, to the extent that the appearance of the unit is noticeably affected.
- (11) **Misshapen units** are whole pods which are seriously deformed.
- (12) **Pathological or insect injury** refers to any unit that possesses obvious pathological or insect damage.
- (13) **Sand, grit, or silt** means any particle of earthy material.
- (d) **"A" classification.** Frozen okra that is practically free from defects may be given a score of 36 to 40 points. **Practically free from defects** means that:
 - (1) Any defects present, whether or not specifically defined or listed herein, do not materially detract from the appearance or edibility of the product; and
 - (2) The defects that may be present in the sample unit do not exceed the allowances specified in Table I.
- (e) **"B" classification.** Frozen okra that is reasonably free from defects may be given a score of 32 to 35 points. Frozen okra that falls into this classification shall not be graded above U.S> Grade B, regardless of the total score for the product (this is a limiting rule). **Reasonably free from defects** means that:
 - (1) Any defects present, whether or not specifically defined or listed herein, do not seriously detract from the appearance or edibility of the product; and
 - (2) The defects that may be present in the sample unit do not exceed the allowances specified in Table I.
- (f) **"SStd" classification.** Frozen okra that fails to meet the requirements of paragraph (e) of this section may be given a score of 0 to 31 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

Table I-Allowances For Defects In Frozen Okra

	Whole style		Cut style	
	Grade A	Grade B	Grade A	Grade B
	Maximum-per 50 pods		Maximum-per 10 ounces	
Blemished units; and seriously blemished units.	3 units, but not more than 1 unit seriously blemished.	6 units, but not more than 2 units seriously blemished.	6 units but not more than 2 units seriously blemished.	12 units but not more than 4 units seriously blemished.
Insignificantly blemished units	Do not more than slightly detract from the appearance.	Do not seriously detract from the appearance.	Do not more than slightly detract from the appearance.	Do not seriously detract from the appearance.
Harmless extraneous material	2 pieces	3 pieces	1 piece	2 pieces
Poorly trimmed; excessively trimmed; small or damaged units; misshapen units; or any combination of these	10 units.	15 units.	12 units.	18 units.
Damaged by mechanical injury	5 units.	10 units.	Not applicable.	Not applicable.
Pathological or insect injury	None	1 unit	1 unit	2 units
Sand, grit, or silt	None	Trace	None	Trace
Total: All defects above and any other defects including above	10 units, do not materially detract from the appearance.	15 units, do not seriously detract from the appearance.	12 units, do not materially detract from the appearance.	18 units, do not seriously detract from the appearance.

§52.1518 Character.

- (a) **General.** The factor of character refers to the development of the pods and seeds and to the degree of freedom from tough fiber. **Tough fiber** in frozen okra means any cooked unit that contains tough fibrous development to the extent that the eating quality of the unit is materially affected.
- (b) **"A" classification.** Frozen okra that possesses a good character may be given a score of 27 to 30 points. **Good character** means that the units are fleshy and tender, that the seeds are in the early stages of maturity, and that not more than 2 whole pods or 4 cut units (as applicable) per sample unit possess tough fibers.
- (c) **"B" classification.** Frozen okra that possesses a reasonably good character may be given a score of 24 to 26 points. Frozen okra that falls into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a limiting rule). **Reasonably good character** means that the units may have lost their fleshy texture to a considerable extent, that the units are reasonably tender, that the seeds may have passed the early stages of maturity, and that not more than 4 whole pods or 8 cut units (as applicable) per sample unit possess tough fibers.
- (d) **"SStd" classification.** Frozen okra that fails to meet the requirements of paragraph (c) of this section may be given a score of 0 to 23 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

§52.1519 Ascertaining the grade of a lot.

The grade of a lot of frozen okra covered by these standards is determined by the procedures set forth in the **Regulations Governing Inspection and Certification of Processed Products Thereof, and Certain Other Processed Foods Products** (§52.1 to §52.83).

§52.1520 Score sheet for frozen okra.

Size and kind of container			
Container marks or identification			
Label			
Net weight (ounces)			
Style (whole, cut)			
Variety			
Factors		Score Points	
Color	30	"A" 27-30 "B" 24-26 <u>1/</u> "SStd" 0-23 <u>1/</u>	
Defects	40	"A" 36-40 "B" 32-35 <u>1/</u> "SStd" 0-31 <u>1/</u>	
Character	<u>30</u>	"A" 27-30 "B" 24-26 <u>1/</u> "SStd" 0-23 <u>1/</u>	
Total Score	100		
Flavor and odor			
Grade			

1/ Indicates limiting rule

Effective date and supersedure. The U.S. Standards for Grades of Frozen Okra (which is the fifth issue) contained shall become effective October 15 1996 hereof in the Federal Register, and will thereupon supersede the U.S. Standards for Grades of Frozen Okra which have been in effect since December 7, 1995.

Dated: September 6, 1996.

Robert C. Keeney
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